Second INTREPID Policy Brief

Exploring Interdisciplinary Careers

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We cannot resolve any of the big challenges we face in the future with just people who have sat in silos coming together. We need young professionals who have come up in this way… to see the interconnections

Anon interdisciplinary doctoral supervisor, 2009

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This briefing note has benefitted from contributions from members of INTREPID and other attendees at the ITD Conference at the Leuphana University of Lüneburg who participated in an interactive discussion workshop held on 11 September 2017.

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Becoming an interdisciplinary academic

Interdisciplinarity has become a cornerstone of research policy with many national and international funding schemes now supporting interdisciplinary research at various stages of the academic life course. Yet, young academic investigators/early career researchers receive very mixed messages about whether this is a desirable career choice (Lyall, forthcoming 2019). In most countries, doctoral training is still largely bound within disciplines and there are well-documented challenges to pursuing an academic career based on interdisciplinary research and teaching when the majority of reward and recognition systems are still single discipline based.

Despite trends towards interdisciplinarity that we have seen throughout the INTREPID project, the view persists that universities still prefer to employ discipline-based experts (Nelson, 2011) and that young academics seeking an interdisciplinary role risk losing job security (Rhoten and Parker, 2004).

Research has been likened to a "craft" where the process of acquiring research skills is a form of "apprenticeship". We thus need to think of doctoral programmes not just as "training" in a particular knowledge base but as a process of "socialisation" where students learn about the cultural norms, language and behaviours through both the taught curriculum and research opportunities and also engagement with other researchers (Holley, 2015; Boden et al., 2011; Felt et al., 2012). Indeed, interdisciplinary scholars debate the extent to which an individual can "learn" to become interdisciplinary (Fam et al., 2017) and there is a widely held appreciation that this requires both the acquisition of an array of skills – often through "learning by doing" – and certain personality traits that predispose the individual to interdisciplinary (or transdisciplinary) aptitudes (Augsburg, 2014; Bruce et al., 2004).

The unique strength of interdisciplinarians is not therefore their knowledge of several disciplines but their more tacit, integrative skills. The doctoral experience is thus not simply about learning skills and facts and becoming an expert in a particular topic or technique, it is also about shaping the type of scholar you will become.

Opportunities and challenges

With this in mind, the INTREPID team put together a workshop on "Exploring Interdisciplinary Careers" as part of the ITD Conference at the Leuphana University of Lüneburg, held on 11 September 2017. Through a series of three interrelated exercises, this workshop engaged with an audience of young (and perhaps not so young!) researchers and teachers to explore the rewards and challenges of following an interdisciplinary career path. We were able to identify a number of "mixed messages" sent by typical reward and recognition systems (in different institutions, in different countries) and both positive and negative factors at an institutional level, and implications for career progression strategies.

We were, of course, working with a highly motivated and self-selected group of interdisciplinary and transdisciplinary (ITD) supporters who were able to cite a wide range of opportunities, with such research providing more holistic perspectives and a chance to explore in new and unconstrained ways. But even these ITD enthusiasts recognized that most universities are not well structured to support these types of careers. There were both epistemological challenges, such as the lack of research focus and direction that might ensue, but also very clear institutional barriers to such careers.

"Uncertainty" was a recurrent theme both in terms of career prospects but also uncertainty about how to frame their research profiles and achieve the right balance between the "specialized" and the "generalized". Participants talked about the slow pace of change within institutions, a sense of "moving in circles" and feeling "pushed around" when they encountered institutional inertia and resistance to new perspectives and working practices.

Moving forward with interdisciplinary careers

Promotion and reward structures

Clearly, from these discussions, "the gap between the rhetoric of endorsement and the reality of practice" endures (Klein et al., 2016). Nowhere is this more evident than in university promotion criteria, which are persistently ranked as the highest impediment to interdisciplinary work (e.g. NAS, 2004). University procedures do not adequately acknowledge that, in the early stages, new interdisciplinary collaborations can take longer to establish, for example, and few universities offer career guidance for interdisciplinary academics and their institutional leaders. Notable exemplars would be Klein's work in the US (Klein, 2010; Klein et al., 2016); the work of the University of Edinburgh[1], and a recent report from the UK Academy of Medical Sciences (2019) suggesting new ways to improve the recognition and reward of "team science".

Role models, mentors and champions

While reward and recognition systems are pivotal, this is not the whole story. The importance of mentors and role models in providing advice and creating the right environment for interdisciplinarity to thrive was highlighted by one of our workshop exercises. Such mentors can encourage and motivate young researchers and can perhaps provide a practical bridge between researchers and other parts of their institutions when dealing with administrative issues.

Mentoring is only one aspect of good academic support for early career researchers. Young interdisciplinary scholars may sometimes feel rather isolated and adrift so facilitation of community building, self-reflection and sharing of experiences is vital. While research support in the form of assistance with grant applications is relatively commonplace within universities, this is less likely to be tailored for interdisciplinary research. Additional training is needed to support students working in an interdisciplinary way, which we have shown to be in demand with early career researchers who are seeking to develop improved "academic life skills" such as communication and team skills (Lyall and Meagher, 2012) as well as advice and support in how to develop professional identities, juggle multiple commitments and present their skill sets to future employers (Graybill et al., 2006).

Funding for next steps

Finally, the value of dedicated postdoctoral funding for young researchers in order to allow them time to establish themselves as authentic interdisciplinary scholars should also not be underestimated. As well as personal development, such funding could also enable cohort networking, community-building, shared reflections and organizational learning.

[1] www.ed.ac.uk/human-resources/pay-reward/promotions-grading/academic-staff/procedures-criteria (accessed 04/04/19).

FURTHER READING

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Catherine Lyall is Professor of Science and Public Policy at the University of Edinburgh where she was formerly Associate Dean for Research Careers in the College of Arts, Humanities and Social Sciences. Laura Meagher is Senior Partner of the Technology Development Group based in St Andrews, Scotland. Together, Catherine and Laura have evaluated a range of funding instruments aimed at supporting interdisciplinary research and conducted many capacity building workshops. They are co-authors on a number of publications including **Interdisciplinary Research Journeys: Practical Strategies for Capturing Creativity** and a series of Short guides to interdisciplinarity (see www.tinyurl.com/idwiki). Catherine’s forthcoming book in the Palgrave Pivot series **Being an Interdisciplinary Academic. How institutions shape university careers** deals with many of the issues outlined in this briefing note in greater detail and will be available summer 2019.

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